

Fig News



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Fig News

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FROM THE EDITORS

The number of responses to the questionnaire in the first issue of *Fig News*, and the positive comments they contained, suggest that the launch of *Fig News* has been a success. Based on the questionnaire and their associated publication lists, we now have material to fill at least two more issues after this one - if your contribution is not in *Fig News 2* it will be in one of these!

Looking further ahead, we received rather few ideas on what more to include in the Newsletter. One-off suggestions included a guide 'how to rear fig wasps and get them to a specialist undamaged' that could be distributed to potential amateur collectors. Perhaps less practical was the suggestion that we turn *Fig News* into a refereed journal, so that fig papers can be published more quickly. Judy Bronstein also had some nice suggestions for alternative titles - 'Sycophile' (-phile) seems particularly appropriate - much better than our 'Facts and Fiction' or 'Figments'.

To give the newsletter a reasonable 'current affairs' content we are very keen to receive more (any?) reports on research news, recent publications, field trips, short notices and publishable letters. What are the controversial issues in fig biology - are there any? Please let us know!

STEVE COMPTON & TONY WARE

January 1992

SHORT 1

Fig Wasp Range Limits: I have begun studying five fig species in northern Sonora, Mexico, at about 31° north latitude (*Ficus petiolaris*, *F. pertusa*, *F. radulina*, *F. cotinifolia* and *F. nitida*); all are successfully pollinated and many "cheater" species (primarily Torymids) are present. We have now found one *Ficus petiolaris* on the University of Arizona campus in Tucson (about 32° north) being visited by torymid species; this is about 200 miles north of the known range limit for *F. petiolaris*. Are these new records for the northern range limit of neotropical fig wasps?

JUDITH BRONSTEIN

AN OLD WORLD RESPONSE

As a graduate of a Yorkshire University I can say with confidence that, like Texas, things are always bigger and better there. Its no surprise then, to claim for Yorkshire the most northerly 'natural' fig tree population in the old world. Thanks to the good old days of industrial pollution in Yorkshire, water temperatures in many rivers were artificially elevated. In the River Don near Sheffield, this allowed sewage-derived edible fig (*Ficus carica*) seeds to establish, with some plants now reaching 8 m high (Gilbert and Pearman 1988). Unfortunately, thermal pollution controls now seem to have made conditions unsuitable for germination, and no young plants were recorded. Sheffield is at about 53° north.

Reference: Gilbert, O.L. and Pearman, M.C. (1988). Wild figs by the Don. *Sorby Record* 25, 31-33.

STEVE COMPTON

SHORT 2

Student seeks Masters degree in fig biology: I have been contacted by a Brazilian student, Rodolfo Antônio de Figueiredo, who is very interested in doing a master's thesis in fig biology. He has already initiated a study on pollination, phenology and frugivory in three Brazilian *Ficus* species. He would like to continue this work for his thesis, while enrolled in and hopefully funded by a graduate institution. Rodolfo is currently teaching evolution in Brazil. You can reach him at: Departamento de Botânica, Universidade de Campinas, Caixa Postal 6109, 13-081, Campinas, SP, Brazil.

JUDITH BRONSTEIN

LETTERS

J. L'HONORÉ: Laboratoire de Biosystématique des Insectes, Faculté des Sciences, Université du Maine, B.P. 535 72017, Le Mans cedex FRANCE.

For some years I've been collaborating with Andre Lantz (CNAM) and Dr Roger Vuattoux (Ecology Station, Lamto, Ivory Coast) on the west African fauna of the lepidopteran families Pyralidae and Thyrididae. Our main interest is in the genus *Glyphodes* whose larvae live on *Ficus*. To date we have bred 12 species. A group which are also of interest and develop on fig trees are the *Glyphipterigidae*.

We are also interested in obtaining material from Asia and other areas in Africa.

KARIN RITA GASTREICH: Department of Zoology, The University of Texas at Austin, Austin, Texas 78712-1064, United States of America.

My interest in figs resulted in part from a field course in tropical biology, which the University of Texas Zoology Department offered this past summer. We stayed for five weeks at Parque Nacional de Corcovado in Costa Rica. During this time we conducted our own projects. I chose to work on a locally

abundant species of fig, *Ficus insipida*. Initially I had intended to work on some aspects of the pollination biology, but quickly became fascinated with the non-pollinating wasps which were also emerging from the figs. Paul Hanson from the University of Costa Rica thinks the wasps that I was studying probably belong to the genus *Critogaster*. At present I am processing the data and trying to organise my ideas for a thesis project in the New World tropics.

There is no one at the University of Texas who is currently working on figs or fig wasps and I would like to contact researchers currently involved in figgy research.

RESEARCH NEWS/PROFILES

SALLY ROSS:

Late in 1990 whilst working at the Centre for Population Biology at Silwood Park and desperately seeking a means of escape from Britain, Steve Compton arrived on leave from South Africa. It didn't take long for him to persuade me that figs were the things to work on and Rhodes the place to do it.

By March I was winging my way across the world, but it was only 4 months later that I finally arrived in South Africa after loads of adventures travelling overland from Kenya - snorkelling and sailing on the Kenyan coast; climbing Mt. Kenya in snow blizzards; trekking in the boggy wastes of The Mountains of the Moon; patting the gorillas in Zaire; paddling round the Okavango Delta.....and many more. I did look hard for figs as well, of course, but the combination of my totally untrained eyes and African transport made it somewhat hopeless to say the least!

I am now 6 months into my Masters at Rhodes. I am essentially an Ecologist and the major part of my project involves the determination of factors influencing the composition of the phytophagous insect fauna of *Ficus burtt-davyi* at both regional and local scales.

On a more general level, I am investigating the host relationships of fig-feeding insects on as wide a range of species as possible, in order to determine whether groups of insects other than the wasps have evolved with the figs.

I am registered for a Masters at the moment but hope to continue and do a Phd.

RHODES UNIVERSITY FIG TEAM FIELD-TRIP 1991

In mid November a group of us from Grahamstown on the south-east Cape coast of South Africa, set off on a month's figging trip. We were to zip northwards to Messina on the Zimbabwe border and then work our way gradually southwards via the Kruger Park, Eastern Transvaal, Eastern Swaziland and Northern and Coastal Natal. Quite a trip - 6500km in all.

There were six of us - two postgraduates (Tony Ware & Sally Ross), three third year undergraduates (Tony Booth, Willem Coetzer & George(Ina) Jones) and Tony Ware's wife (Kathy Holton) all collecting for our own projects and Steve Compton's general wasp collection. Of the 23 South African fig species, we managed to track down 21 and make wasp collections from 19: *F. abutilifolia*, *F. bizanae*, *F. bubu*, *F. burtt-davyi*, *F. caprellifolia*, *F. craterostoma*, *F. glumosa*, *F. ingens*, *F. lutea*, *F. natalensis*, *F. polita*, *F. salicifolia*, *F. sansibarica*, *F. stuhlmanni*, *F. sur*, *F. sycomorus*, *F. thoningii*, *F. tettensis*, *F. tremula*, *F. trichopoda* and *F. verruculosa*.

Various other projects involved taking leaf samples for DNA analysis; looking for signs of sabotage of latex defences and those insects that were responsible; collecting larval and adult fruit-feeding insects; making a herbarium collection; collecting fig pollen etc etc. All in all fruit from 108 trees was collected for the general wasp collection and fig-feeding insects and sabotage samples were collected from 240 trees. We therefore had great fun trying to prevent drying out, mould and rotting of the collections in temperatures of up to 55°C (in the bus)!

Of course there were plenty of compensations for this undesirable aspect



of the trip, mostly arising from managing to spend more than 50% of our time in national parks and nature reserves! Fieldwork accompanied by the roars of lions; curious elephant herds; rather too-close black mambas; hippos grazing in the campsite; swimming in shark, croc and bilharzia - infested waters (not always intentionally!); the climbing of baobabs etc. has that little bit of extra excitement somehow! This was especially appreciated by me, having done all of my previous fieldwork in England.

I think the award for the most ambitious fig tree must go to a *F. sansibarica* found trying to strangle an enormous baobab in the Transvaal. As for the most exciting find - a wasp-producing *F. bubu* tree eventually tracked down on the shores of Lake Sibaya in Natal, producing only the second wasp collection from this species in South Africa. This was a particularly exciting find as it followed two days of incredible bundu bashing and croc hopping in the most intense heat in Swaziland with the final result - 6 trees, none of the fruit at the right stage.

When it comes to the most elusive creature the award must go to longhorn beetle latex saboteurs which avoided us for 3 weeks despite the all too common sighting of their damage. An abortive morning of sampling in Hluhluwe Game Reserve must have been the most exciting event of the trip. We were forced to retreat somewhat rapidly from a hilltop by a large herd of elephants intent on blocking our path to the summit.

We are still processing our samples and will be for many months to come, but it is already obvious that it was an extremely productive month. Great fun too of course!

Sally Ross.



ARTICLE

PREDICTIONS ON THE HOST SPECIFICITY OF AGAONID WASPS

W. RAMIREZ B.

Due to the high degree of specificity of the agaonid wasps to their fig hosts, very accurate predictions can be made. Based on the morphology of the male flower of *F. rivularis* (subgenus *Ficus*, series *Rivulares*), Ramírez (1977) predicted that this species was probably pollinated by a *Ceratosolen* wasp. He also concluded that the series *Rivulares* and *F. pseudopalma* (series *Pseudopalmae*), pollinated by *C. bakeri* Grandl, did not belong to the same group of *Blastophaga*-pollinated figs and he transferred them to a new *Ceratosolen*-pollinated complex of the genus *Sycomorus*. The same author (1980) placed *Rivulares* and *Pseudopalmae* and the section *Adenosperma* in the same cladistic branch (Ramírez, 1980). These relationships partially agreed with the Ideas of Corner (1969:328) where he quoted that "in perianth, style and seed *F. rivularis* agrees with *Adenosperma*".

<i>Blastophaga</i> group	Taxon	Fig host taxa <i>sensu</i> Corner 1965
A	<i>Blastophaga</i> (<i>sensu stricta</i>)	sect. <i>Ficus</i> sect. <i>Kalosyce</i> sect. <i>Rhyzocladus</i>
B	<i>Kradibia</i>	ser. <i>Eriolyceae</i> ser. <i>Scabrae</i> ser. <i>Varinga</i> ¹
C	?	ser. <i>Phaeopilosae</i> ²
D	<i>Wiebesia</i>	ser. <i>Copiosae</i>
E	<i>Platyscapa</i>	sect. <i>Urostigma</i> ³
F	<i>Dollichoris</i>	sect. <i>Oreosyceae</i>
G	<i>Platyscapa</i> ?	sect. <i>Stilpnophyllum</i> ⁴

¹ Wiebes (1978) described a *Ceratosolen* species in a *Varinga* fig (*F. asperiuscula* K. & B.). ² In *Blastophaga* group C the female has closed sternal pockets and large elongate gorge-like peritremata in the eighth urotergite as in *Ceratosolen*. The males have normal middle legs and *Blastophaga* facies. *B. jacobsi* belongs here. ³ According to Wiebes (1986) *Platyscapa* wasps are also found in *Conosyceae* species. ⁴ *Stilpnophyllum* has only the species *F. elastica* pollinated by *B. clavigera*, which may belong to *Platyscapa*.

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During November, 1989, I visited the University of Phillipines at Los Banos,

and had the opportunity to visit the Tijuuan River at the Botanical Garden in Luzon, Lad Grant Quezon, where *F. rivularis* grows as a riparian plant. Thanks to the cooperation of Mr Blas F. Hernaez and to the employees of the Botanical Garden, two syconia were found to contain agaonids, which were described as *Ceratosolen ramirezi* by Wiebes (1991).

Ramírez (1977) also divided the genus *Blastophaga* into seven Groups (A-G) which supposedly inhabit some taxonomic fig groups. Most of these groups except C and G have been assigned taxonomic status as illustrated in the table. This idea agreed with Wiebes (1963) who noted that the species of *Blastophaga* from the various series of the section *Ficus*, *Sycidium*, *Rhyzocladus* and *Kalosyce* belonged to several species groups.

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THESIS ABSTRACT

JORGE PEDRO PEREIRA CARAUTA (1989). Caixa postal 34031, Agência Jardim Botânico, 22462 Rio de Janeiro, RJ, Brazil.

Ficus (Moraceae) no Brazil: Conservação e Taxonomia. *Albertoa* 2, 1-365.

The genus *Ficus* is of extreme importance in tropical ecosystems, not only because of its edible fruits, which sustain the food chain of many wild animals, but also because of its strangler species. Seed dispersal is achieved mainly by birds which eat the fruit and evacuate the seeds in distant places. Northern-Brazil is the richest region in species, followed by the Central-West, Southeast, South and Northeast.

Thirty threatened species may be found in Brazil, e.g.: *Ficus ursina* (endangered), *F. castelviana* (vulnerable), *F. mexiae* (rare), *F. pallida* (indeterminate); one out of danger: *F. hirsuta*; 5 conserved, e.g.: *F. paraensis*; 21 protected, e.g.: *F. organensis*; 2 unknown, e.g.: *F. schippii*.

The 54 Brazilian species of the subgenus *Urostigma* exhibit an ample crown and sculptural trunks that adapt to very different habitats. They may be found growing on rocks, cliffs, as epiphytes in the field as well as in the recesses of the forest. The 5 species of the subgenus *Pharmacosycea* reach heights greater than the former, but the crown is much smaller. Besides the native species, there are also 30 exotic ones belonging to the subgenera mentioned above, and to *Sycomorus* and *Ficus*. Fecundation of the female flowers involves a complex relationship between the plant and certain species of wasps, not well studied in Brazil.

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8. 1984. Floral differentiation and dioecism in *Ficus* (Moraceae). In *Mini symposium: Figs and Fig Insects* (Eds Kjellberg, F. and Valdeyron, G.) pp 15-28. CNRS-Centre Louis Emberger, Montpellier.
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Richard T. Corlett: Bibliography

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Richard T. Corlett: Interests

Ficus phenology, seed dispersal and dioecious fig biology.

Other interests include the ecology and biogeography of the Asian tropics and sub-tropics, the general dispersal of seeds, succession and the impact of humans on tropical biotas.

Yves Caraglio: Bibliography

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Interests

Ficus taxonomy, growth and development (architecture) and morphology.

Other interests include modelling the architecture of trees in general, myrmecophily and epiphytism.

RECENT PUBLICATIONS

- * Badawi, A. and Al-Ahmed, A.M. (1990). The population dynamics of the oriental scale insect, *Aonidiella orientalis* (Newstead) and factors affecting its seasonal abundance. *Arab Gulf J. Scient. Res.* 8, 81-89. [On *F. nitida*]
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TRIVIA

FRESH FIG SAUCE with GIN

Serves 8-10

A deliciously rich and unusual sauce for ice cream. It may be served hot or cold and can be refrigerated for up to three days.

12 ripe figs (minus the fig wasps)

15 ml lemon juice

125 ml gin

250 ml sugar

60 ml water

250 ml tub cream

Peel the figs and cut them into large chunks. Pour over gin and lemon juice and set aside for an hour to macerate. Drain and reserve juices.

Combine sugar and water in a medium saucepan and heat, stirring, until sugar dissolves. Boil briskly, uncovered. The moment the syrup darkens slightly remove the pot from the stove and stir in the fig juices and cream - be careful of the hot steam.

Some of the syrup will harden; just keep stirring over low heat until the sauce is smooth and crispy bits have dissolved. Add the figs to the sauce and tip it all into a serving bowl. Allow to cool slightly before serving.

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